

shrink as its heat was radiated into space, until the outer parts, retaining their original velocity, could no longer cohere, but would be left outside in the form of a gigantic ring. This ring as it further shrank (along its length now), would dissolve into fragments, and these would eventually coalesce into a single planet, the outermost. Then another would be formed in the same way, and another, and yet another, until at last there would be left, in the middle, the great mass which was afterwards to govern that family of worlds. Each planet, at its beginning, being like the original gaseous disc, would go through a similar process of contraction, and form as many bodies subsidiary to itself as its quantity of matter and the conditions under which it had itself been formed would allow. The process would fail in some cases, and so several small planets would be formed instead of one large one, as we see in the case of the asteroids; or, as in the case of Saturn's system, a ring or set of rings (rings of small satellites, as we now know) would form instead of a single large satellite.

Laplace's theory, if we grant its initial assumption, accounts fairly for all the features of the solar system except the singular distribution of the planets into families—the giant planets outside, as if guarding the rest; the terrestrial planets near the sun, as if under his protecting wing; the asteroids or minor planets in the mid space between these families, as if keeping them apart. But, unfortunately, the initial assumption, on which the whole theory depends, is as utterly inadmissible as the theory that Saturn's rings might conceivably be solid. It is almost inconceivable how amazingly impossible that initial assumption is. Few probably know that a solid disc of steel, extending only to the earth's orbit, could not move as a single mass. If the central part of such a disc—say a region as large as the sun's globe—were set rotating as by some mighty hand, the outer parts would not feel the impulse until more than ten months had elapsed. But imagine a disc extending to the orbit of the planet Neptune, thirty times further from the centre than is the earth's path. Imagine, further, such a disc-shaped region of space, not occupied by a mighty mass of the stoutest steel, but by a vaporous mass many thousands of times more tenuous than the air we breathe. It is such a disc that we have to imagine, according to Laplace's theory, rotating as a single mass. No argument is really needed to show that this is absolutely impossible. But it is a truly remarkable circumstance that, while a mathematician like Maxwell Clerk did not hesitate to point out (with perfect justice, be it remarked) that the solid flat rings which Laplace recognized in the Saturnian system, because they seemed to be plainly visible there, would be absolutely plastic under the forces to which they were exposed, astronomers and physicists have been apparently afraid to acknowledge that a vaporous disc such as he only imagined, a disc rarer than the rarest known gas, so vast that the whole Saturnian system would be but as a speck by comparison, and moved by far mightier forces than act on that system, could have no coherence whatever and could not possibly even begin to behave as Laplace's theory required. If the mere mathematician had been thus weak we might not have wondered, for mathematicians often rejoice over problems depending on impossible conditions—perfect rigidity, absolute uniformity, entire absence of friction, and so forth. But physicists and astronomers have usually required conditions more in accordance with the actual workings of nature.—*London Times*.

HERE AND THERE.

Most people thought it had long since been decided to erect the new Ontario Parliament Buildings in Queen's Park, and had the discussion now taking place in the Toronto press not originated with a henchman of Sir John Macdonald's it would probably have been howled down as a device of Mr. Mowat to delay a large expenditure of public money. From the first it has appeared to many disinterested persons that Queen's Park is no proper site for the Provincial House. That demesne has already been too much encroached upon, and as the only central open-air public resort in Toronto is altogether out of proportion to the city's requirements. To call Clarence Square or St. James's Square adjuncts to the Park is simply puerile, and indicates a very contracted view of the purposes for which a public park is calculated—as also is the objection to parks being used as play-grounds. The squares and other open spaces which dot the city are of great value as "lungs"—places of public resort for recreation they are not, any more than is Spadina Avenue or Bloor Street. Whether or not the position suggested by Mr. Smith is adapted for the proposed structure remains to be seen; until expert opinion has been formulated it would be superfluous to surmise; but that it would be a public misfortune to have the new legislative halls in Queen's Park appears clear.

THE *Canada Law Journal* has the following: "The pernicious example set some years ago by Vice-Chancellor Mowat in stepping down from the Bench into the arena of party politics has been followed by Judge Thompson, of Nova Scotia, who takes the position of Minister of Justice of the Dominion. For either party after this to refer to the subject would indeed be for the pot to call the kettle black. We presume, therefore, there will be very little said about it. That there is now ample precedent for this descent is a misfortune to the country."

INDEPENDENT journalism in its steady progress to public favour is being freely kicked by the way. Less could not have been expected. Of course it is the party organs and a few violent politicians who, conscious of the mistake they have made in alienating the sympathies of moderate men by extreme language and rash measures, now seek to belittle the literature forced into existence by their own folly. "Whoso is not with us is against

us" protests the partisan, and so the journalist who places Truth above Party and the Public Good before Self-Interest is incontinently attacked on all sides. There is an old saying that a cause must pass through three stages ere it can claim to be successful: first, it is ignored; then it is attacked; finally it is endorsed. Party frenzy shortened the preliminary experience of the Independent Press; it is now undergoing the middle stage. *Fortuna sequatur*.

UNFAMILIARITY with English affairs has betrayed some of our contemporaries into crediting Lord Randolph Churchill with having originated the project for making Galway a great naval port. The scheme has been mooted scores of times—on several occasions in connection with a proposal for the establishment of a new line of trans-Atlantic steamers. No English Government has of late seen its way to granting a subsidy for such a purpose; and, as Parnellite terrorism has driven capital out of Ireland, besides discouraging English investors, the idea has lapsed for want of support. It is a mistake, however, to suppose that a line of steamers running from Galway to New-York or Point Levis would divert trans-Atlantic trade. The time saved would not nearly compensate for the trouble of transshipment of either goods or passengers.

APROPOS of the proposal to make Galway an open port: A line of steamers under contract with Her Majesty's Government was actually run from Galway to New York or Boston in about 1856 to 1861, via St. John's, Newfoundland. A company at first supplied chartered boats for the line, one of them being called the *Brazil*, and another the *Prince Albert*, both of them formerly in the service of a company running a steamboat line from an English port to Brazil. The company proposed to build four steamers for the service; one, the *Connaught*, was completed and put upon the route, but was burned at sea. The amount of subsidy received by the company from the Imperial Government cannot now be stated, but they received \$28,000 to \$30,000 per annum from the Government of Newfoundland. The wharf and premises now occupied at St. John's by the Allan Company is still called "The Galway Wharf," and the agency of the Allan line remains in the hands of Sir Ambrose Shea, who was the agent of the "Galway Company," and from which, as he alleges, he received the property in lieu of certain demands held by him against the company.

THE Protectionists of Canada, alarmed at constant secessions from their ranks and at the growth of Free Trade ideas, eagerly seize upon every incident from which they can extract comfort. No sooner had Parnell declared in favour of Protection for Ireland than the Separationist leader became a statesman in the eyes of loyal National Policy men. It might have been more prudent on their part to await the verdict of that portion of Ireland on the new departure which is not only the most intelligent and prosperous but the most loyal and law-abiding. The lazy tag-rag and bob-tail Irish led by Mr. Parnell have everything to gain by the "No-Rent" cry, and fatuously follow any lead which is "agin the Government"; but the prosperous North has not only steadily refused to countenance the Home Rulers, but may be depended upon to take up arms in extremity on behalf of the British Government. The hardy and hard-working Protestant North, who number about two millions out of a whole population of less than five millions, are a unit on this question, nor do they need commercial protection. Honest industry has done for them what it would have done for most parts of Ireland. In Belfast, when making his tour of Ireland, Lord Carnarvon beheld a conclusive refutation of the accuracy of Mr. Parnell's views that a protective tariff is indispensable to the development of Irish industries. We may pass over the linen manufacture, a success in which Belfast is *facile princeps* in the world, because that industry unquestionably received considerable State protection in the last century. But take iron ship-building, of which Belfast is now one of the chief centres in the United Kingdom. This industry has an existence of only a quarter of a century in the Ulster capital; yet, despite the formidable competition of the building-yards of the Clyde and the Mersey, Belfast has been able to construct ocean steamers to the orders of several leading Liverpool steamship companies, besides doing a large Continental and American business in the same line. Belfast is unique among Irish towns. Nearly the equal of Dublin in population, it is much its superior in commercial enterprise. Its broad, handsome thoroughfares, continuously crowded with a busy traffic, its numerous and beautiful public buildings, ecclesiastical, educational, and mercantile, its many factory chimneys, its large docks crowded with home and foreign shipping, combined with the thriving industry, contentment, and passionate loyalty to the throne and the union with Great Britain of its orderly and energetic population, cause the stranger visiting Belfast for the first time to rub his eyes and ask himself in wonder if he can really be in one of the chief towns of the Ireland of whose poverty, discontent and disaffection he has heard so much.

THE *Christian Guardian*, speaking of the Irish Land League just formed in Toronto, asks: What possible good can come of raking up penal laws and wrongs to Ireland that are things of the past? One of the speakers is reported to have made a violent speech. He said that in the Irish famine of 1847 "English ships brought grain to British ports, but not a grain to Ireland"; then he went on to refer to "that stupid Yorkshire clown, Buckshot Forster," a remark which brought forth cheers and hisses. In Mr. A. M. Sullivan's book, "New Ireland," we read the following: "Foremost in this blessed work during the famine were the Society of Friends, the English members of that body co-operating with its central committee in Dublin. Among the most active and fearless of their representatives was a young Yorkshire Quaker, whose name, I doubt not, is still